Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1-62. (Cancelled)

63. (Original) A device, comprising:

a reference fiber having a first terminal and a second terminal;

a signal fiber having a first terminal and a second terminal, and a tapered section between said first and second terminals which has a reduced dimension to allow a desired portion of a guided optical beam at a signal frequency to exist outside said signal fiber in form of an evanescent field;

a first optical coupler to divide a signal laser beam at said signal frequency into a first signal beam and a second signal beam of an equal intensity and to couple said first and said second signal beams into said first terminals of said signal and said reference fibers, respectively;

a second optical coupler coupled to said second terminals of said signal and said reference fibers to combine said first and said second signal beams into an output signal beam in which said first and said second signal beams are 180 degrees out of phase relative to each other;

a measurand surface disposed adjacent to said tapered section of said signal fiber to absorb optical energy in said evanescent field; and

a signal photodetector to receive said output signal beam from said second optical coupler to produce a detector output indicating a spacing between said measurand surface and said signal fiber at said tapered section.

64. (Previously presented) The device as in claim 63, further comprising a phase-lock element to maintain said first and said second signal beams are at a specific phase relative to each other at said second optical coupler.

65. (Previously presented) The device as in claim 63, wherein said phase-lock element is operable to change a phase delay in at least one of said signal and said reference fibers.

66. (Previously presented) The device as in claim 63, wherein said phase-lock element is operable to measure an interference between two reference signal beams respectively passing through said signal and said reference fibers at a reference frequency that is not absorbed by said measurand surface to determine a relative phase change in said reference

and said signal fibers, wherein said interference is measured from an output reference beam produced by said second optical coupler.

67. (Previously presented) The device as in claim 63, further comprising a wavelength-selecting element to separate said output signal beam and said output reference beam, and a reference photodetector to receive said output reference beam.

68. (Previously presented) The device as in claim 63, further comprising more than one of said tapered sections on said signal fiber for the purpose of observing the motion of more than one of said measurand surfaces.

69. (Previously presented) The device as in claim 68, further comprising more than one of said measurand surfaces oscillating at substantially different frequencies for the purpose of separating, in frequency, said output signal beams for each of said measurand surfaces.

70. (Previously presented) The device as in claim 68, further comprising one or more actuators to modulate the position of one or more of said tapered sections for the purpose of shifting the frequencies of one or more of said output signal beams and separating, in frequency, said output signal beams for each of said measurand surfaces.

71-83. (Cancelled)